What is claimed is:

1. A biosensor produced by folding, bending, or folding and bending a sheet of an electrical insulating flat substrate.

2. A biosensor, comprising:

an electrode disposed in a space sandwiched between a substrate and a cover;

a sample inlet port through which a sample is injected into the space; and

a sample transfer path extending from the sample inlet port to pass through the electrode,

wherein the substrate and the cover are formed by folding and bending a sheet of an electrical insulating plate member,

the electrode is formed on a surface of the plate member, and the plate member is folded and bent with its surface inside so that the electrode is disposed in the space sandwiched between the substrate and the cover, and

the sample transfer path is disposed on the surface of the plate member and is defined by an adhesive layer for face-to-face disposing the substrate and the cover.

3. The biosensor according to claim 2,

wherein perforations are formed in a foldable and bendable part of the plate member to be folded and bent.

4. A biosensor, comprising:

a sensor body formed by bending a sheet of an electrical insulating plate member in a cylindrical structure;

an electrode formed on an inner wall of the sensor body;

a sample inlet port formed on one end or a side face of the cylinder; and

a sample transfer path extending from the sample inlet port to pass through the electrode.

5. The biosensor according to claim 4,

wherein the cylindrical structure is columnar, oval-columnar, semicircle-columnar, fan-columnar, crescent-columnar, triangle-columnar, square-columnar or polygon-columnar.

6. The biosensor according to any of claims 2 to 5,

wherein the electrode is defined by a resist layer.

7. The biosensor according to any of claims 2 to 6,

wherein a reagent layer is provided on the electrode

through which the sample transfer path passes.

8. The biosensor according to any of claims 2 to 6, wherein a reagent layer is provided on a cover through which the sample transfer path passes.

9. The biosensor according to any of claims 2 to 8, wherein the sample inlet port is formed on one end or in an intermediate point of the sample transfer path.

10. The biosensor according to any of claims 2 to 9, wherein a surfactant and/or a lipid is applied around the sample inlet port, or to or around a surface of the sample transfer path and the reagent layer.

11. The biosensor according to claim 10, wherein the lipid is lecithin.

12. The biosensor according to any of claims 2 to 11, wherein a tip portion of the sample inlet port has a curved part.

13. The biosensor according to any of claims 2 to 12, wherein the plate member is any of plastics, biodegradable materials, or paper.

14. The biosensor according to claim 13,
wherein the plastic is polyethylene terephthalate.

15. The biosensor according to any of claims 2 to 14,
wherein the electrode is formed from any of carbon, silver, silver/silver chloride, platinum, gold, nickel, copper, palladium, titanium, iridium, lead, tin oxide, or platinum black.

16. The biosensor according to claim 15,
wherein the electrode is formed from nickel.

17. The biosensor according to claim 15,
wherein the carbon is selected from any of carbon nanotubes, carbon microcoils, carbon nanohorns, fullerenes, dendrimers, or their derivatives.

18. The biosensor according to any of claims 2 to 17,
wherein the electrode is formed on the plate member by any of a screen-printing process, a vapor deposition process, a sputtering process, a foil-sticking process, or a plating process.

19. The biosensor according to any of claims 2 to 18,

wherein the adhesive layer is formed by a screen-printing process.

20. The biosensor according to any of claims 2 to 17,

wherein the reagent is included in the adhesive layer.

21. The biosensor according to claim 6,

wherein the resist layer is formed by a screen-printing process.

22. The biosensor according to claim 7,

wherein the reagent layer is formed after purification.

23. The biosensor according to any of claims 7 to 22,

wherein the reagent layer is formed by a screen-printing process or a dispenser process.

24. The biosensor according to any of claims 7 to 23,

wherein the reagent layer is fixed on a surface of the electrode, a surface of the plate member, or the cover by an adsorption process in which the reagent layer is dried, or a covalent bond process.

25. The biosensor according to any of claims 7 to 24,

wherein two or more different reagent layers are provided.

26. The biosensor according to claim 25,

wherein a convex partition portion is disposed between the different reagent layers.

27. The biosensor according to claim 26,

wherein the convex partition portion is formed by a screen-printing process.

28. The biosensor according to claim 27,

wherein the convex partition portion is formed from any of carbon, resist, or water-absorbent material.

29. The biosensor according to any of claims 7 to 28,

wherein the reagent layer includes any of enzyme, antibody, nucleic acid, primer, peptide nucleic acid, nucleic acid probe, microorganism, organelle, receptor, cell tissue, molecule identification element such as crown ether, mediator, intercalator, coenzyme, labeled antibody substance, substrate, inorganic salt, surfactant, lipid, or their combinations.

30. The biosensor according to claim 29,

wherein the enzyme is any of an oxidase or dehydrogenase enzyme such as glucose oxidase, fructosylamine oxidase, lactate oxidase, urate oxidase, cholesterol oxidase, alcohol oxidase, glutamate oxidase, pyruvate oxidase, glucose dehydrogenase, lactate dehydrogenase, alcohol dehydrogenase, as well as cholesterol esterase, protease, DNA polymerase, or their combinations.

31. The biosensor according to any of claims 7 to 30,

wherein the reagent layer includes a combination of enzyme and mediator.

32. The biosensor according to claim 31,

wherein the mediator is selected from potassium ferricyanide, ferrocene and benzoquinone.

33. The biosensor according to any of claims 7 to 32,

wherein the reagent layer includes a combination of an inorganic salt such as sodium chloride or potassium chloride, and quinhydrone.

34. The biosensor according to any of claims 7 to 33,

wherein the reagent layer includes a combination of

primer, DNA polymerase, and deoxyribonucleotide triphosphate.

35. The biosensor according to any of claims 7 to 34,

wherein the reagent layer includes a combination of an inorganic salt such as sodium chloride or potassium chloride, and quinhydrone, primer, DNA polymerase and deoxyribonucleotide triphosphate.

36. The biosensor according to claim 7,

wherein an nucleic acid probe is immobilized as the reagent layer.

37. The biosensor according to claim 36,

wherein the electrode forms an array.

38. A biosensor device, comprising:

a biosensor of any of claims 1 to 37,

a measuring unit which measures an electric value at an electrode of the biosensor,

a display unit which displays a value measured by the measuring unit,

a memory unit which stores the measured value.

39. The biosensor device according to claim 38,

wherein any of potential step chronoamperometry, coulometry, or cyclic voltammetry is used as a measuring method by the measuring unit.

40. The biosensor device according to claim 38 or 39,

wherein Bluetooth is further provided as a wireless unit.

41. A method of storing a biosensor of any of claims 1 to 37 along with a desiccant.

42. A method of producing a biosensor which comprises an electrode, a sample inlet port through which a sample is injected into a space, and a sample transfer path extending from the sample inlet port to pass through the electrode, which are disposed in the space sandwiched between a substrate and a cover, and in which the sample transfer path is defined by an adhesive layer for face-to-face disposing the substrate and the cover,

the method comprises a folding and bending step of a plate member as follows:

a step of forming a substrate and a cover from a sheet of an electrical insulating plate member by folding and bending the plate member such that the electrode formed on a surface of the plate member faces inside, to thereby

dispose the electrode in the space sandwiched between the substrate and the cover.

43. The method of producing the biosensor according to claim 42, which includes:

the folding and bending step; and

a step of cutting a folded portion which is a folded and bent part of the plate member.

44. The method of producing the biosensor according to claim 43,

wherein the folded portion is cut along perforations.

45. The method of producing the biosensor according to claim 42, which includes:

the folding and bending step of the plate member; and

a step of fixing the substrate and the cover by compression or modification working of the substrate or the cover, or application of a curing agent or a thermal-shrinking agent to the folded part, or equipping a fixing tool.

46. The method according to claim 45,

wherein the compression is a method of fixing at least a part of the biosensor under pressure.

47. The method according to claim 45,

wherein the modification working is a method of heating or thermally fixing under pressure the folded portion of the biosensor, or the folded portion and a surrounding portion thereof, or any other part of the biosensor.

48. The method according to claim 45,

wherein the adhesive layer of the biosensor includes a thermosetting resin, and

the modification working is a method of heating or thermally fixing under pressure the folded portion of the biosensor, or the folded portion and a surrounding portion thereof, or any other part of the biosensor, to cure all or a part of the adhesive layer.

49. The method according to claim 45,

wherein the plate member of the biosensor is formed from a light transparent material,

the adhesive layer includes a photocurable resin, and

the modification working is a method of irradiating the biosensor with light to cure the adhesive layer.

50. The method according to claim 45,

wherein the plate member of the biosensor includes a thermosetting resin, and

the modification working is a method of heating all or a part of the plate member to cure all or a part of the plate member.

51. The method according to claim 45,

wherein the plate member of the biosensor includes a photocurable resin, and

the modification working is a method of irradiating the plate member with light to cure the plate member.

52. The method according to claim 45,

wherein the modification working is a method of applying a solvent to a surface of the folded portion of the biosensor, or to the surface of the folded portion and a surrounding portion thereof to infiltrate the solvent into the folded portion.

53. The method according to claim 45,

wherein the application of the curing agent is a method of applying a thermosetting resin to the folded portion of the biosensor, or to the folded portion and a surrounding portion thereof and further heating the thermosetting resin, to cure the thermosetting resin.

54. The method according to claim 45,

wherein the application of the curing agent is a method of applying a photocurable resin to the folded portion of the biosensor, or to the folded portion and a surrounding portion thereof and further irradiating the photocurable resin with light, to cure the photocurable resin.

55. The method according to claim 45,

wherein the application of the thermal-shrinking agent is a method of applying a thermal-shrinking agent to the folded portion of the biosensor, or to the folded portion and a surrounding portion thereof and further heating the thermal-shrinking agent, to semi-cure the thermal-shrinking agent.

56. The method according to claim 45,

wherein the equipping of the fixing tool is by pinching, encapsulating, capping, clamping with an elastic member, working with a thermal-shrinking agent, or fitting of an adhesive tape.

57. The biosensor according to claim 2,

wherein a folded portion of the biosensor is cut by

the method of claim 43 or 44.

58. The biosensor according to claim 2,

wherein the biosensor is processed to be fixed by the method of any of claims 45 to 55.

59. The biosensor according to claim 2,

wherein the biosensor has a fixing tool which prevents a warp of the substrate and the cover.